

Acquisition

Fire Performance Tests and Requirements for Shipboard Mattresses (D-2002-105)

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Acronyms

DCMA Defense Contract Management Agency
DSCP Defense Supply Center Philadelphia
FAR Federal Acquisition Regulation
NAVSEA Naval Sea Systems Command
NIB National Industries for the Blind



INSPECTOR GENERAL DEPARTMENT OF DEFENSE 400 ARMY NAVY DRIVE ARLINGTON, VIRGINIA 22202–4704

June 14, 2002

MEMORANDUM FOR DIRECTOR, DEFENSE CONTRACT MANAGEMENT
AGENCY
DIRECTOR, DEFENSE LOGISTICS AGENCY
NAVAL INSPECTOR GENERAL

SUBJECT: Report on the Fire Performance Tests and Requirements for Shipboard Mattresses (Report No. D-2002-105)

We are providing this report for your information and use. We conducted the audit in response to a request from the Director, Defense Logistics Agency. We considered management comments on a draft of this report when preparing the final report.

Comments on the draft of this report conformed to the requirements of DoD Directive 7650.3 and left no unresolved issues. Therefore, no additional comments are required.

We appreciate the courtesies extended to the staff. Questions should be directed to Mr. Henry F. Kleinknecht at (703) 604-9324 (DSN 664-9324) (hkleinknecht@dodig.osd.mil) or Mr. Ronald W. Hodges at (703) 604-9592 (DSN 664-9592) (rhodges@dodig.osd.mil). See Appendix D for the report distribution. The team members are listed inside the back cover.

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Acting Assistant Inspector General

for Auditing

Office of the Inspector General of the Department of Defense

Report No. D-2002-105

June 14, 2002

Project No. D2002CH-0033

Fire Performance Tests and Requirements for Shipboard Mattresses

Executive Summary

Who Should Read This Report and Why? This report should be read by DoD contracting officials responsible for developing contract performance requirements, officials responsible for approving first article test results, and quality assurance representatives responsible for conducting contract performance tests and ensuring contractor compliance with contract performance requirements.

Background. The audit was performed in response to a request from the Director, Defense Logistics Agency regarding the award and administration of contract SP0100-00-D-EE72 to procure innerspring mattresses for the Navy. The Navy, under its habitability improvement program, had been testing innerspring mattresses since the early 1990s as replacements for the neoprene foam mattresses on board ships. In March 2000, the Secretary of the Navy approved a habitability improvement initiative to replace the neoprene foam mattresses on board ships with significantly more comfortable innerspring mattresses. The Navy had a total requirement for 180,000 innerspring mattresses to support this habitability improvement initiative. From March through July 2000, the Naval Sea Systems Command developed a purchase description for a fire-resistant, innerspring, shipboard mattress. Based on the purchase description, the Defense Supply Center Philadelphia awarded contract SP0100-00-D-EE72 to National Industries for the Blind in July 2000 to manufacture 90,000 innerspring mattresses valued at \$12.5 million. A follow-on contract for additional innerspring mattresses was awarded in August 2001.

In August and September 2001, the Naval Sea Systems Command and the Defense Supply Center Philadelphia had fire performance tests conducted on the innerspring mattresses for the initial and follow-on contracts. The tests identified that the innerspring mattresses did not meet fire resistance requirements. In October 2001, the Defense Supply Center Philadelphia directed National Industries for the Blind to stop manufacturing the innerspring mattresses.

Results. The Naval Sea Systems Command and Defense agency contracting officials did not require National Industries for the Blind to conduct sufficient fire performance tests for first article and quality assurance requirements on the innerspring mattresses. As a result, the Navy spent \$12.5 million for 90,448 mattresses that did not meet Navy-defined fire performance requirements. The Defense Supply Center Philadelphia then needed to procure fire-resistant mattress covers, costing an additional \$4.3 million,

to reduce the risk of the mattresses catching fire. Requiring compliance with technical requirements to perform tests on future procurements of innerspring mattresses or notifying the contracting officer if the Navy amends its technical requirements will ensure that mattresses meet contract requirements. Implementation of acquisition requirements will improve the Defense Supply Center Philadelphia's abilities to: maintain adequate documentation on future innerspring mattress procurements to support all contractual actions, require the contractor to provide innerspring mattresses that comply with contract requirements, and require the contractor to comply with contract quality assurance requirements should also include requiring the contractor to comply with contract quality assurance requirements for any future innerspring mattress contracts or obtaining a contract modification from the contracting officer. (See the Finding section for the detailed recommendations.)

Management Comments. The Commander, Naval Sea Systems Command; Director, Defense Logistics Agency; and Director, Defense Contract Management Agency concurred with the recommendations and stated that corrective actions were completed or will be completed by June 30, 2002. In addition, the Director, Defense Contract Management Agency generally agreed with the finding and stated that two key events related to the administration of the innerspring mattress contract were not included in the chronology of events in Appendix B. We partially agreed with this statement and added one of the events to Appendix B. Therefore, no further comments are required. See the Finding section of the report for a discussion of management comments and the Management Comments section of the report for the complete text of the comments.

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Background

The Navy, under its habitability improvement program, had been testing innerspring mattresses since the early 1990s as replacements for the neoprene foam mattresses on board ships. In March 2000, the Secretary of the Navy approved a habitability improvement initiative to replace the neoprene foam mattresses with significantly more comfortable innerspring mattresses. The Navy had a total requirement for 180,000 innerspring mattresses.

From March through July 2000, the Naval Sea Systems Command (NAVSEA) developed a purchase description for a fire-resistant, innerspring, shipboard mattress (Innerspring Mattress). Based on the purchase description, the Defense Supply Center Philadelphia (DSCP) awarded contract SP0100-00-D-EE72 to National Industries for the Blind (NIB) in July 2000 to manufacture 90,000 Innerspring Mattresses. From July 2000 through June 2001, the Navy procured 90,448 Innerspring Mattresses at a total cost of \$12.5 million.

In August 2001, DSCP awarded a follow-on contract (SP0100-01-D-EE66) to NIB to manufacture an additional 90,000 Innerspring Mattresses. The follow-on contract required NIB to submit mattresses to Omega Point Laboratories, Inc. for first article fire performance tests prior to producing the mattresses. NIB sent 12 Innerspring Mattresses to Omega Point Laboratories, Inc. for fire performance tests, and all 12 mattresses failed because the mattresses had flaming droplets.

In September 2001, NAVSEA sent an additional 21 Innerspring Mattresses manufactured under the initial and follow-on contracts to Omega Point Laboratories, Inc. for fire performance tests, and 15 of the mattresses failed. Personnel from the NAVSEA Fire Protection Branch, Naval Surface Warfare Center witnessed the tests and verified that the mattresses did not meet the Navy fire performance requirements. As a result, NAVSEA did not order mattresses under the follow-on contract, and DSCP directed NIB to stop manufacturing the Innerspring Mattresses. To reduce the risk of fire from the mattresses that did not meet fire performance requirements that were already issued to the fleet, DSCP awarded contract SP0100-02-D-EA34 to NIB in November 2001 to manufacture 90,000 fire-resistant mattress covers at a total cost of \$4.3 million.

DSCP has partnered with NAVSEA and NIB to ensure that adequate research, development, and testing are conducted on the Innerspring Mattresses and to write a purchase description that will satisfy the Navy fire performance requirements prior to awarding another Innerspring Mattress contract. See Appendix B for a chronology of events for Innerspring Mattress procurement.

Naval Sea Systems Command. NAVSEA is one of five Navy systems commands under the Secretary of the Navy. NAVSEA responsibilities include habitability and quality of life issues for the Navy fleet. Specifically, the NAVSEA Human Systems Integration Directorate and the Fire Protection Branch, Naval Surface Warfare Center were responsible for providing the

purchase description for an Innerspring Mattress that meets Navy requirements for size, comfort, and fire resistance. NAVSEA requested DSCP assistance to award a contract for Innerspring Mattresses to NIB.

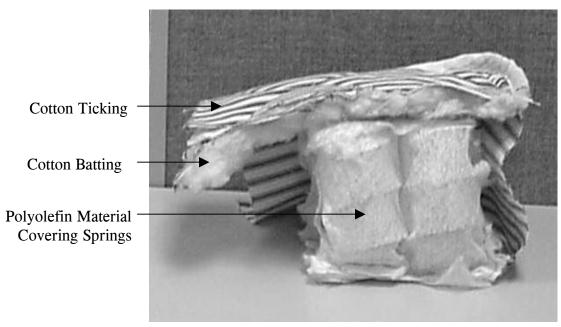
Defense Supply Center Philadelphia. DSCP is 1 of 11 Defense Logistics Agency field organizations and is responsible for providing supply support, contract management services, and technical and logistics services to DoD. Specifically, DSCP is responsible for awarding contracts to support DoD needs for food, clothing, textiles, medicines, medical equipment, and general and industrial supplies, including mattresses. DSCP obtained the Innerspring Mattress procurement requirements from NAVSEA and awarded the initial and follow-on contracts for Innerspring Mattresses to NIB. DSCP designated the Defense Contract Management Agency (DCMA) as the administrative contracting office for the contracts.

Defense Contract Management Agency. DCMA is responsible for performing contract administration functions, which include ensuring that the contractor complies with contract requirements throughout the life of the contract. DCMA has three districts, which include 135 field offices, and assigns contract administration duties to administrative contracting officers and quality assurance representatives located in the districts where the contracts are being performed. The DCMA representatives visit contractor facilities to ensure that the contractors perform work in accordance with the contracts.

National Industries for the Blind. NIB is a mandatory source of supply for mattresses under Federal Acquisition Regulation (FAR) Part 8, in accordance with the Javits-Wagner-O'Day Act and the rules of the Committee for Purchase From People Who Are Blind or Severely Disabled. In July 2000, NIB designated the following manufacturers to produce the mattresses under contract SP0100-00-D-EE72: Virginia Industries for the Blind, Charlottesville, Virginia; Lions Club Industries, Durham, North Carolina; and Winston-Salem Industries for the Blind, Winston-Salem, North Carolina. NIB added a fourth manufacturer, Lions Club Industries, Tupelo, Mississippi, to the contract in May 2001.

Mattress Components. Contract SP0100-00-D-EE72 required the mattresses to consist of fire-resistant components. The Innerspring Mattresses consist of three components: innerspring, individually pocketed coils; cotton batting; and cotton ticking. The innerspring component consists of coils individually pocketed in polyolefin material, which is not fire resistant. The innerspring component was successfully used to satisfy comfort requirements over the neoprene foam mattress. The cotton batting and cotton ticking are both chemically treated to be fire resistant, in accordance with commercial standards, and are quilted together to make up the outer layer of the mattress. The 1-sided mattresses consist of the innerspring component covered with the cotton batting quilted to the cotton ticking on the top of the mattress, but no cotton batting quilted to the cotton

ticking on the bottom of the mattress. Two-sided Innerspring Mattresses have cotton batting quilted to the cotton ticking on the top and bottom of the mattresses. The Innerspring Mattress components are identified in the following picture.



Navy Innerspring Mattress Components

Fire performance tests have demonstrated that the polyolefin material, which is not fire resistant, is the mattress component that forms burning droplets and usually results in the mattress failing the fire performance test.

Objective

The overall audit objective was to determine whether contract award and administration policies and procedures were properly followed for contract SP0100-00-D-EE72. Appendix A discusses the audit scope, methodology, and prior coverage.

Fire Performance Tests and Requirements

NAVSEA and Defense agency contracting officials did not require NIB to conduct sufficient fire performance tests for first article and quality assurance requirements on the Innerspring Mattresses procured on contract SP0100-00-D-EE72. Sufficient fire performance tests were not performed because:

- NAVSEA did not require NIB to comply with first article test requirements;
- DSCP modified the contract without obtaining adequate support to delete first article requirements; and
- DSCP and DCMA contracting officers did not require NIB to perform 6-month conformance tests.

The Secretary of the Navy directed that the procurement cycle for the Innerspring Mattresses be reduced from 1 year to 6 months and limited funding for testing also impacted decisions relating to fire performance tests. As a result, the Navy spent \$12.5 million for 90,448 mattresses that did not meet Navy-defined contract requirements for fire resistance. DSCP then needed to procure fire-resistant mattress covers for an additional \$4.3 million to satisfy fire performance requirements.

Innerspring Mattress Contract

Navy Initiative. On March 16, 2000, NAVSEA briefed the Secretary of the Navy on habitability improvement initiatives, including providing Innerspring Mattresses to the fleet. The Innerspring Mattresses were significantly more comfortable than the neoprene foam mattress. When the Secretary of the Navy approved the habitability improvement initiative to provide Innerspring Mattresses to the fleet, NAVSEA stated that the initiative would take 1 year to implement. The Secretary of the Navy directed that the procurement cycle for the Innerspring Mattresses be reduced from 1 year to 6 months. NAVSEA program officials developed a purchase description for an Innerspring Mattress based on a commercial mattress that was modified to meet the Navy shipboard fire performance requirements. In July 2000, 4 months after the Secretary of the Navy approved the habitability improvement initiative, NAVSEA officials implemented the initiative by authorizing DSCP to award a contract to NIB to manufacture Innerspring Mattresses.

Contract Requirements. DSCP incorporated the NAVSEA purchase description for Innerspring Mattresses into the contract and, in July 2000, awarded the contract to NIB to manufacture 90,000 1-sided Innerspring Mattresses. The contract included first article requirements and quality assurance requirements.

First Article Requirements. FAR Subpart 2.1, "Definitions," defines first article as the initial production sample of a product procured under contract. The first article requirements in the contract state that a sample shall consist of two units of each mattress size. Each sample is evaluated at the contract facility, and then the mattress samples are shipped to the Defense Logistics Agency Product Test Center for comfort tests and Omega Point Laboratories, Inc. for fire performance tests.

Facility Evaluation. First article requirements state that the samples of mattresses shall be evaluated for conformance with visual and physical characteristics defined in the purchase description. The characteristics evaluated include stitching, labeling, length, width, depth, weight, and overall appearance.

Comfort Tests. First article requirements state that one sample mattress shall be sent to the Defense Logistics Agency Product Test Center for firmness and durability tests.

Fire Performance Tests. First article requirements state that one sample of each mattress size shall be submitted to Omega Point Laboratories, Inc. for fire performance tests. Omega Point Laboratories, Inc. is a commercial test facility that DSCP contracted with to conduct the fire performance tests. The mattresses must comply with the requirements of National Fire Protection Association 267, 1998 Edition, "Standard Method of Test for Fire Characteristics of Mattresses and Bedding Assemblies Exposed to Flaming Ignition Source." The national standard requirements are in addition to, and do not negate, the flammability requirements cited in the purchase description, which state that the mattresses must meet the following three conditions of acceptance.

- The maximum, net peak-heat release rate shall not exceed 150 kilowatts.
- Burning droplets shall not be formed and dropped to the floor or the top of the weighing platform.
- Average specific extinction area shall not exceed 300 meters²/kilograms.

First article requirements state that the contractor shall provide copies of the fire performance test results to the contracting officer and NAVSEA. First article requirements also state that if the contractor is using multiple manufacturing facilities, each manufacturing facility is required to submit mattresses for first article tests. Further, if the contractor changes processes, materials, suppliers, or manufacturing facilities after first article approval, a new first article sample must be submitted for tests. However, on August 4, 2000, DSCP issued

modification P00001 to delete the requirement for 1-sided Innerspring Mattresses and added the requirement for NIB to manufacture 2-sided mattresses. This modification also deleted first article requirements.

Quality Assurance Requirements. The quality assurance requirements in the contract state that the contractor is responsible for performance of all examinations and tests. The contractor is required to certify in writing, using a certificate of conformance, that the products comply with the contract requirements. The contractor is required to re-validate any such certification by performing these tests at 6-month intervals. The contract also requires that the contractor provide copies of test reports to the contracting officer.

NAVSEA Responsibilities and Actions

NAVSEA did not require NIB to comply with first article test requirements for either 1-sided or 2-sided Innerspring Mattresses.

Testing of 1-Sided Mattresses. The contract required that one sample of each size of 1-sided Innerspring Mattresses be submitted to Omega Point Laboratories, Inc. for fire performance tests. All three NIB facilities sent one or two samples of 1-sided Innerspring Mattresses to Omega Point Laboratories, Inc. for fire performance tests in July 2000. A NAVSEA official went to Omega Point Laboratories, Inc. and witnessed the tests for at least one mattress. The 1-sided mattresses failed the fire performance tests. NAVSEA then requested DSCP to modify the contract to require 2-sided Innerspring Mattresses, which DSCP did in August 2000.

Testing of 2-Sided Mattresses. NAVSEA did not require the contractor to conduct adequate fire performance tests on the 2-sided Innerspring Mattresses that complied with first article requirements. Specifically, only four mattresses were tested in July 2000, three of the four mattresses did not meet one of the three fire performance requirements, and mattresses were only tested from one of the three NIB facilities before NAVSEA directed DSCP to authorize each facility to start production. Because nine mattress sizes were identified for production on the contract, at least nine mattresses, one of each size, should have been tested.

NAVSEA Oversight of the Testing. The NAVSEA official responsible for the mattress procurement witnessed fire performance tests for two of the four 2-sided Innerspring Mattresses tested in July 2000. Then, a NAVSEA official contacted DSCP and verbally approved the mattresses for production even though the first article requirements in the contract were not satisfied.

Approval of Mattresses for Production. The NAVSEA official approved the 2-sided Innerspring Mattresses even though three of the four mattresses did not meet one of the three fire performance test requirements. Based on the test results, NAVSEA did not request that the contracting officer change the purchase description to match the mattresses that NAVSEA accepted. For example, the purchase description stated, "Burning droplets shall not be formed and dropped to the floor or the top of the weighing platform." However, the NAVSEA representative witnessing the fire performance tests saw at least five flaming droplets form on three of the four Innerspring Mattresses, but considered the droplets "inconsequential" and accepted the mattresses as meeting NAVSEA requirements. In addition, NAVSEA did not require the contractor to comply with contract requirements for all mattress components to be fire resistant. Specifically, the polyolefin material used to pocket the innerspring coils was not fire resistant and caused the burning droplets to form during the fire performance tests.

Sample Requirements. The NAVSEA official approved the 2-sided Innerspring Mattresses even though the four 2-sided mattresses did not meet the sample requirements for the three NIB manufacturing facilities. The four mattresses were all manufactured at one facility, Lions Club Industries in Durham, North Carolina. However, the first article requirements state that if the contractor is using multiple manufacturing facilities, each manufacturing facility is required to submit mattress samples for first article approval.

NAVSEA Actions. When the Secretary of the Navy approved the habitability improvement initiative in March 2000, the Secretary of the Navy directed that the procurement cycle for the Innerspring Mattresses be reduced to 6 months so the fleet would begin receiving the mattresses by November 2000. NAVSEA did not have funding for research and development of the mattresses. Instead, NAVSEA relied on DSCP and NIB to provide funding and mattress samples, respectively. The urgency to obtain the Innerspring Mattresses within 6 months, as requested by the Secretary of the Navy, and insufficient funding impacted decisions by NAVSEA officials relating to fire performance tests.

NAVSEA needs to require that contractors comply with first article test requirements for Innerspring Mattresses and notify the contracting officer if NAVSEA accepts mattresses that do not meet purchase description requirements in the contract.

DSCP and DCMA Responsibilities and Actions

DSCP modified the contract without obtaining adequate support to delete first article requirements and did not ensure that NIB provided mattresses that complied with contract requirements. Also, both DSCP and DCMA contracting officers did not require NIB facilities to perform 6-month conformance tests.

Contracting officers at DSCP and DCMA are required to follow FAR guidance when administering Government contracts. See Appendix C for applicable FAR requirements.

Contract Modification. Based on the NAVSEA official's verbal approval of the fire performance tests on the four 2-sided Innerspring Mattresses, DSCP modified the contract in August 2000 to delete the purchase description for the 1-sided mattress and add purchase descriptions for nine sizes of the 2-sided mattress. DSCP also deleted the first article requirements and did not enforce or change the purchase description requirement, which stated, "Burning droplets shall not be formed and dropped to the floor or the top of the weighing platform." Specifically, DSCP modified the contract without obtaining adequate support or documentation to delete first article requirements because DSCP took this action without written confirmation from NAVSEA. There was no written documentation in the contract file that identified the person who directed the change or why the change was made. As a result, DSCP did not comply with FAR Part 4, "Administrative Matters," which requires the contracting officer to maintain records of all contractual actions, including sufficient documentation to make informed decisions throughout the contracting process. DSCP needs to obtain and maintain adequate documentation to support all contractual actions in accordance with FAR Part 4.

Contract Compliance. DSCP and DCMA did not ensure that each of the three NIB manufacturers met first article requirements for the Innerspring Mattresses, as required by the contract. Specifically, on July 26, 2000, a DSCP technical representative sent an electronic mail message directing the DCMA quality assurance representatives at the three NIB manufacturers not to send any more mattresses for fire performance tests. DSCP also limited the quality assurance representatives' responsibilities to performing dimensional, weight, and visual examination only. DCMA quality assurance representatives followed this direction for 11 months of the 12-month contract before obtaining written documentation from the contracting officer. Thus, DCMA quality assurance representatives did not require NIB manufacturers to send mattresses for fire performance tests in accordance with contract requirements to perform 6-month conformance tests. As a result, DCSP and DCMA did not comply with FAR Part 9, "Contractor Qualifications," which states that the contractor should provide a product that conforms to contract requirements. DSCP and DCMA need to require that NIB provide Innerspring Mattresses that comply with contract requirements in accordance with FAR Part 9.

Contract Administration. Both DSCP and DCMA did not adequately perform contract administration duties. Although the contract required the contractor to perform 6-month conformance tests, DCSP and DCMA did not require the contractor to perform the tests. FAR Part 42, "Contract Administrative and Audit Services," requires that the administrative contracting officer ensure contractor compliance with contractual quality assurance requirements. If 6-month conformance tests had been performed, DSCP or DCMA could have identified that the mattresses were not meeting fire-resistance requirements and saved about \$4.8 million on the procurement of the mattresses during the last 6 months of the contract. DSCP and DCMA need to require NIB to comply with contract quality assurance requirements in accordance with FAR Part 42.

DSCP and **DCMA** Actions. DSCP and DCMA did not comply with FAR requirements for the administration of the contract. For example, DSCP did not keep adequate records in the contract file and did not require the contractor to provide Innerspring Mattresses in accordance with the terms of the contract. Also, DSCP and DCMA contracting officers did not ensure that the contractor complied with 6-month conformance test requirements.

Summary

NAVSEA, DSCP, and DCMA jointly share responsibility for Innerspring Mattresses that did not meet fire-resistance requirements. NAVSEA developed a purchase description for a 1-sided Innerspring Mattress and DSCP awarded a contract for the mattresses to NIB in July 2000. When the 1-sided mattresses failed the fire performance tests, NAVSEA changed the requirement to 2-sided mattresses and requested DSCP to modify the contract. Defense contracting officials subsequently deleted first article requirements and did not require NIB facilities to conduct tests throughout the life of the contract, so the Innerspring Mattresses were manufactured for 1 year before their lack of fire resistance was identified. As a result, the Navy spent \$12.5 million for 90,448 mattresses that did not meet Navy-defined contract requirements for fire resistance. In addition, DSCP procured fire-resistant mattress covers costing \$4.3 million to reduce the risk of the mattresses catching fire. Recommendations made in this report relate to procurements of future products to prevent similar problems from occurring.

Management Comments on the Finding and Audit Response

Management Comments. The Defense Contract Management Agency generally agreed with the finding and stated that two key events related to the administration of the Innerspring Mattress contract were not included in Appendix B. Specifically, the July 26, 2000, electronic mail message sent from the Defense Supply Center Philadelphia to the quality assurance representatives was not included. Also, contract modification P00005, dated June 29, 2001, was not included in Appendix B. This modification directs quality assurance representatives to only check mattresses for weight and dimensional requirements.

Audit Response. We partially concur with the Defense Contract Management Agency suggestion and added a reference to the July 26, 2000, electronic mail message in Appendix B. However, we did not include a reference to the June 29, 2001, contract modification because the modification was made with less than 1 month remaining on the contract.

Recommendations and Management Comments

- 1. We recommend that the Commander, Naval Sea Systems Command:
- a. Require that contractors comply with first article test requirements on contracts for Innerspring Mattresses.
- b. Notify the contracting officer if the Navy accepts mattresses that do not meet purchase description requirements on future contracts.

Management Comments. The Navy concurred with the recommendations. The Navy will include strict test sampling procedures in a new innerspring mattress contract that is scheduled to be awarded in May 2002. In addition, the Naval Sea Systems Command plans to formally notify the Defense Supply Center Philadelphia contracting officer if the Navy accepts any changes to the mattress purchase description requirements and modify the contract to reflect these changes. The Navy stated that they would complete both actions by May 31, 2002.

- 2. We recommend that the Director, Defense Supply Center Philadelphia when awarding another Innerspring Mattress contract:
- a. Obtain and maintain adequate documentation to support all contractual actions in accordance with Federal Acquisition Regulation Part 4, "Administrative Matters."
- b. Require National Industries for the Blind and its subcontractors to provide Innerspring Mattresses that comply with contract requirements in accordance with Federal Acquisition Regulation Part 9, "Contractor Qualifications."
- c. Require National Industries for the Blind and its subcontractors to comply with Innerspring Mattress contract quality assurance requirements in accordance with Federal Acquisition Regulation Part 42, "Contract Administrative and Audit Services."

Management Comments. The Defense Logistics Agency concurred with the recommendations. The Defense Supply Center Philadelphia issued Contracting and Production Policy Memorandum Number 01-16, "Request for Waiver of First Article Testing," October 15, 2001, as a direct response to lessons learned during the administration of the mattress contract. The Defense Supply Center Philadelphia will ensure that all contracting officers maintain records of all contractual actions taken, that all contractors provide a product that conforms to all contract requirements for acceptance, and that contract administration authority delegated to an administrative contracting officer results in contractor compliance with all contractual quality assurance requirements.

3. We recommend that the Director, Defense Contract Management Agency require National Industries for the Blind and its subcontractors to comply with quality assurance requirements for any future Innerspring Mattress contracts in accordance with Federal Acquisition Regulation Part 42 or obtain modifications from the contracting officer for any changes to the 6-month conformance tests in contract requirements.

Management Comments. The Defense Contract Management Agency agreed that contract modifications should only be made when the procurement contracting officer authorizes a change to the contract. All personnel were directed to comply with Federal Acquisition Regulation requirements and that customer directions comply with basic contracting principles. The Defense Contract Management Agency will discuss lessons learned from the administration of the innerspring mattress contract at the Executive Management Board meeting scheduled for May 23, 2002, and expects to complete all actions related to the recommendation by June 30, 2002.

Appendix A. Scope and Methodology

Scope

Work Performed. We evaluated the award and administration of contract SP0100-00-D-EE72 for the procurement of Innerspring Mattresses, which was valued at about \$12.5 million. We also reviewed the follow-on Innerspring Mattress contract, SP0100-01-D-EE66, and the mattress cover contract, SP0100-02-D-EA34, as they related to the administration of contract SP0100-00-D-EE72. We compared policies, procedures, and documentation related to the contract with the FAR requirements. Specifically, we reviewed the contract, contract modifications, results of fire performance tests, correspondence between DSCP and quality assurance representatives, and minutes of meetings with NIB, DSCP, and NAVSEA representatives. We also interviewed DoD, NAVSEA, and contractor personnel involved with the procurement of Innerspring Mattresses.

We conducted our review at DSCP in Philadelphia, Pennsylvania; NAVSEA in Washington, D.C.; NIB Headquarters in Arlington, Virginia; Winston-Salem Industries for the Blind in Winston-Salem, North Carolina; Lions Club Industries in Durham, North Carolina; and Virginia Industries for the Blind in Charlottesville, Virginia. We did not review the management control program because the scope of the audit was limited to award and administration policies and procedures related to the contract.

General Accounting Office High-Risk Area. The General Accounting Office has identified several high-risk areas in the DoD. This report provides coverage of the Defense Contract Management high-risk area.

Methodology

Use of Computer-Processed Data. We did not rely on computer-processed data for our review of the award and administration policies and procedures followed for the contract.

Audit Dates and Standards. We performed this audit from October 2001 through February 2002 in accordance with generally accepted government auditing standards.

Contacts During the Audit. We visited or contacted individuals within DoD and within National Industries for the Blind in Arlington, Virginia. Further details are available on request.

Prior Coverage

No prior coverage has been conducted on the subject during the last 5 years.

Appendix B. Chronology of Events for Innerspring Mattresses Procured on Contract SP0100-00-D-EE72

Dates	Events			
August 1994	Naval Research Laboratory conducts fire tests on several new Innerspring Mattresses.			
September 1999	USS Cole requests 210 Innerspring Mattresses after Innerspring Mattresses are tested aboard the ship.			
March 2000	The Secretary of the Navy approves habitability improvement initiative to replace neoprene foam mattresses with Innerspring Mattresses on board ships.			
March to July 2000	NAVSEA develops a purchase description; 1-sided and 2-sided mattresses of varying compositions are tested to meet firmness, weight, and fire-resistance characteristics.			
July 14, 2000	DSCP awards contract SP011-00-D-EE72 to NIB for 1-sided Innerspring Mattresses.			
July 20, 2000	One-sided mattresses fail fire performance tests.			
July 24-25, 2000	Four 2-sided mattresses are tested for fire performance. NAVSEA official accepts mattresses as passing even though three exhibit burning droplets.			
July 26, 2000	DSCP technical representative sent an electronic mail message requesting the DCMA quality assurance representatives at the three NIB manufacturers not to send any more mattresses for fire performance tests.			
August 4, 2000	DSCP modifies contract SP0100-00-D-EE72 to specify procurement of 2-sided mattresses and delete first article requirements.			
August 26, 2001	Nine of 12 mattresses submitted for first article fire testing under the follow-on contract fail heat-release rate requirements, and all 12 exhibit flaming droplets.			
August 29, 2001	DSCP awards a follow-on contract, SP0100-01-D-EE66, to NIB for 90,000 additional Innerspring Mattresses.			
September 21, 2001	Fifteen of 21 mattresses produced under the initial and follow-on contracts fail fire tests.			
October 2001	DSCP directs NIB to stop all Innerspring Mattress production.			
November 16, 2001	DSCP awarded a contract to NIB to manufacture 90,000 fire-resistant mattress covers to reduce the risk of fire from mattresses already issued to the fleet that did not meet fire performance requirements.			
January 2002	DSCP partners with NAVSEA and NIB to perform additional research, development, and testing on Innerspring Mattresses.			

Appendix C. Federal Acquisition Regulation Requirements

The FAR provides guidance to contracting officers and contractors involved with Government contracts. Specifically, the FAR defines duties and responsibilities for all personnel involved in the award and administration of Federal contracts. The following FAR requirements pertain to the administration of contract SP0100-00-D-EE72.

FAR Part 4. FAR Part 4, "Administrative Matters," states that the head of each contracting office shall establish files containing the records of all contractual actions. The documentation in the files shall be sufficient to constitute a complete history of the transaction. The purpose of the documentation includes providing a complete background as a basis for informed decisions at each step in the acquisition process, supporting actions taken, providing information for reviews and investigations, and furnishing essential facts in the event of litigation or congressional inquiries.

FAR Part 9. FAR Part 9, "Contractor Qualifications," states that the contractor shall provide a product that conforms to all contract requirements for acceptance. Before requiring testing and approval, the contracting officer shall consider the impact on cost or time of delivery, the risk to the Government of not performing such a test, and the availability of less costly methods of ensuring the desired quality. Testing and approval is also recommended when the contractor has furnished the product to the Government before but there have been changes in the processes or specifications. FAR Part 9 explains that the solicitations shall provide the performance that the first article must meet for approval, the detailed technical requirements for the tests that must be performed for approval, and the necessary data that must be submitted to the Government in the first article approval test report. The Government laboratory or other activity responsible for first article testing shall inform the contracting officer whether to approve, conditionally approve, or disapprove the first article.

FAR Part 42. FAR Part 42, "Contract Administration and Audit Services," states that contracting officers may delegate contract administration or specialized support services, either through interagency agreements or by direct request, to the cognizant contract administration office listed in the Federal Directory of Contract Administration Services Components.

The contracting officer normally delegates 70 contract administration functions to a contract administration office that include:

- performing production support, surveillance, and status reporting, including timely reporting of potential and actual slippages in contract delivery schedules;
- ensuring contractor compliance with contractual quality assurance requirements;

- performing engineering surveillance to assess compliance with contractual terms for schedule, cost, and technical performance in the areas of design, development, and production;
- reporting to the contracting office any inadequacies noted in specifications;
- assisting in evaluating and making recommendations for acceptance or rejection of waivers and deviations;
- assigning and performing supporting contract administration;
- ensuring timely submission of required reports; and
- supporting the program, product, and project offices regarding program reviews, program status, program performance, and actual or anticipated program problems.

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller)
Deputy Chief Financial Officer
Deputy Comptroller (Program/Budget)
Director, Defense Procurement

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Commander, Naval Sea Systems Command Naval Inspector General Auditor General, Department of the Navy

Department of the Air Force

Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Logistics Agency Director, Defense Supply Center Philadelphia Director, Defense Contract Management Agency

Non-Defense Federal Organization

Office of Management and Budget

Non-Government Organization

National Industries for the Blind

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

Senate Committee on Appropriations

Senate Subcommittee on Defense, Committee on Appropriations

Senate Committee on Armed Services

Senate Committee on Governmental Affairs

House Committee on Appropriations

House Subcommittee on Defense, Committee on Appropriations

House Committee on Armed Services

House Committee on Government Reform

House Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations, Committee on Government Reform

House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform

House Subcommittee on Technology and Procurement Policy, Committee on Government Reform

Department of the Navy Comments



DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
RESEARCH, DEVELOPMENT AND ACQUISITION
1000 NAVY PENTAGON
WASHINGTON, DC 20350-1000

2 8 MAY 2002

MEMORANDUM FOR THE ACQUISITION MANAGEMENT DIRECTORATE, OFFICE OF THE ASSISTANT INPECTOR GENERAL FOR AUDITING

Subj: DRAFT AUDIT REPORT ON FIRE PERFORMANCE TESTS AND REQUIREMENTS FOR SHIPBOARD MATTRESSES (PROJECT NUMBER D2002CH-0033)

Ref: (a) DoDIG Draft Report D2002CH-0033 dated 20 March 2002

Encl: (1) DoN Comments to Draft Report D2002CH-0033

In response to reference (a), enclosure (1) is forwarded as the Department of the Navy response to the subject draft audit. In summary, the Department of the Navy concurs with the findings and will take necessary action to comply with the recommendations.

Deputy Assistant Secretary of the Navy Planning, Programming, and Resources

Copy to: NAVAL INSPECTOR GENERAL (N43) NAVSEASYSCOM (SEA00N)



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND 1333 ISAAC HULL AVE SE WASHINGTON NAVY YARD DC 20376-0001

IN REPLY TO

7500 Ser 00N3/187 16 May 02

To:

From: Commander, Naval Sea Systems Command

Assistant Secretary of the Navy Research,

Development and Acquisition

Subj: DODIG DRAFT REPORT -- FIRE PERFORMANCE TESTS AND REQUIREMENTS FOR SHIPBOARD MATTRESSES (PROJECT

NUMBER D2002CH-0033)

Encl: (1) NAVSEA's Response to the Draft Report

1. The Naval Sea Systems Command (NAVSEA) has reviewed the draft report and concurs with the report's findings and recommendations pertaining to NAVSEA. Corrective action has been identified and will be implemented during May 2002. Enclosure (1) contains our comments and planned corrective actions.

2. NAVSEA point of contact is Ms. Ruth Wolfe (SEA 00N3) on 202-781-3328 or e-mail at Wolfere@navsea.navy.mil.

Copy to: NAVINSGEN N4

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Subj: DODIG DRAFT REPORT -- FIRE PERFORMANCE TESTS AND
       REQUIREMENTS FOR SHIPBOARD MATTRESSES (PROJECT
       NUMBER D2002CH-0033)
Blind copy to:
SEA 05B
SEA 05L
SEA 05LB
SEA 05L5
SEA 00L23
SEA 00L75
SEA 02421
SEA 00N1
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DEPARTMENT OF THE NAVY RESPONSE

DODIG DRAFT REPORT ON FIRE PERFORMANCE TESTS AND REQUIREMENTS FOR SHIPBOARD MATTRESSES (Project No. D2002CH-0033, Dated 20 Mar 2002)

Recommendation 1.a: We recommend that the Commander, Naval Sea Systems Command require that contractors comply with the first article test requirements on contracts for Innerspring Mattresses.

Department of the Navy Response: Concur. The recommendation will be enacted under a new contract for low flammable innerspring mattresses to be let by the Defense Supply Center Philadelphia (DSCP) in May 2002. Strict test sampling procedures in accordance with accepted industry standards and commensurate to quantities of each size mattress produced will be invoked for first article in the specification and contract, and compliance will be monitored and enforced. Target completion date is 31 May 2002.

Recommendation 1.b: We recommend that the Commander, Naval Sea Systems Command notify the contracting officer if the Navy accepts mattresses that do not meet purchase description requirements on future contracts.

Department of the Navy Response: Concur. Starting with the new contract for low flammable innerspring mattresses (see response to 1.a above), NAVSEA will formally notify the DSCP contracting officer if any compromise to the mattress purchase description requirements is acceptable to the Navy. In addition, the specific changes required will be identified and the purchase description modified to implement the less stringent requirements into the contract. Target completion date is 31 May 2002.

Enclosure (1)

Defense Logistics Agency Comments



DEFENSE LOGISTICS AGENCY HEADQUARTERS 8725 JOHN J. KINGMAN ROAD, SUITE 2533 FORT BELVOIR, VIRGINIA 22060-6221

IN REPLY J-308

MAY 1 4 2002

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING DEPARTMENT OF DEFENSE

SUBJECT: Draft Audit Report, "Fire Performance Tests and Requirements for Shipboard Mattresses," March 20, 2002. Project No. D2002CH-0033

The Defense Logistics Agency concurs with the recommendation in the subject draft report and has taken corrective measures as stated in the attachment.

We appreciate the opportunity to comment on the draft report. Questions may be referred to Mr. Paul Sabatini, Acquisition Programs Division, (703) 767-3760 or Ms. Annell Williams, Internal Review Office, (703) 767-6274.

HAWTHONNE L. PROCTOR Major General, USA

Director

Logistics Operations

Attachment DLA Comments



SUBJECT: DOD IG Draft Report on Fire Performance Tests and Requirements for Shipboard Mattresses, March 20, 2002, Project No. D2002CH-0033

The following information represents our formal response to recommendations 2 a-c on pages 9 and 10 of subject report.

RECOMMENDATION 2: We recommend that the Director, Defense Supply Center Philadelphia when awarding another Innerspring Mattress contract:

a. Obtain and maintain adequate documentation to support all contractual actions in accordance with Federal Acquisition Regulation part 4, "Administrative Matters."

RESPONSE TO 2a:

The Directorate of Clothing and Textiles concurs completely with DOD IG recommendation 2a. In accordance with the regulations outlined in FAR Part 4, "Administrative Matters," we will ensure that on all current and future contracts the contracting officer maintains records of all contractual actions taken, including sufficient documentation to make informed decisions that support those actions throughout the contracting process.

In addition, Contracting and Production Policy Memorandum Number 01-16, Request for Waiver of First Article Testing (FAT), dated 15 October 2001 (copy attached), implemented a new policy concerning waivers of FAT. This memorandum was instituted as a direct result of lessons learned during the administration of the Mattress contract and provides clear direction to all individuals involved in the acquisition process.

<u>b.</u> Require National Industries for the Blind and its subcontractors to provide Innerspring Mattresses that comply with contract requirements in accordance with Federal Acquisition Regulation part 9, "Contractor Qualifications."

RESPONSE TO 2b:

The Directorate of Clothing and Textiles concurs completely with DOD IG recommendation 2b. In accordance with the regulations outlined in FAR Part 9, "Contractor Qualification," we will ensure, with the assistance of the Defense Contract Management Agency (DCMA), that ALL CONTRACTORS provide a product that conforms to all contract requirements for acceptance. We will enforce all performance provisions required in the contract and ensure all testing procedures are performed properly, in a timely manner and accepted with accompanying documentation to support component, first article and end-item approval.

<u>c.</u> Require National Industries for the Blind and its subcontractors to comply with Innerspring Mattress contract quality assurance requirements in accordance with Federal Acquisition Regulation part 42, "Contract Administrative and Audit Services."

RESPONSE TO 2c:

The Directorate of Clothing and Textiles concurs completely with DOD IG recommendation 2c. In accordance with the regulations outlined in FAR Part 42, "Contract Administrative and Audit Services," we will ensure that when the contracting officer delegates contract administration authority to the applicable contract administration office, that the ACO will ensure contractor compliance with all contractual quality assurance requirements. This procedure will be consistent with all other Clothing and Textile contracts administered by the Defense Contract Management Agency.

Defense Contract Management Agency Comments



DEFENSE CONTRACT MANAGEMENT AGENCY 6350 WALKER LANE, SUITE 300 ALEXANDRIA, VA 22310-3241

IN REPLY REFER TO

DCMA-OCT

MAY 15 2002

MEMORANDUM FOR DIRECTOR, CONTRACT MANAGEMENT DIRECTORATE INPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Audit Report on the Fire Performance Tests and Requirements for Shipboard Mattresses

The draft report dated March 20, 2002, on the subject audit has been reviewed by DCMA and the comments are provided in the attachment.

If you have any questions or if any further information is required, please contact, Mr. R. Pillai who can be reached at Tel: (703) 428-1166, Fax: (703) 428-1898, and E-Mail: rpillai@hq.dema.mil.

ROBERT W. SCHMITT

Executive Director

Contract Management Operations

Attachment

SUBJECT: Fire Performance Tests and Requirements for Shipboard Mattresses, D2002CH-0033

FINDING: Fire Performance Tests and Requirements.

NAVSEA and Defense contracting officials did not require NIB to conduct sufficient fire performance tests for first article and quality assurance requirements on the Innerspring Mattresses procured on contract SP0100-00D-EE72. Sufficient fire performance tests were not performed because:

- NAVSEA did not require NIB to comply with first article test requirements;
- DCSP modified the contract without obtaining adequate support to delete first article requirements; and
- DSCP and DCMA contracting officers did not require NIB to perform 6month conformance tests.

The Secretary of the Navy directed that the procurement cycle for the Innerspring Mattress be reduced from 1 year to 6 months and limited funding for testing also impacted decisions relating to fire performance tests. As a result, the Navy spent \$12.5 million for 90,448 mattresses that did not meet Navy-defined contract requirements for fire resistance. DSCP then needed to procure fire-resistance mattress covers for an additional \$4.3 million to satisfy fire performance requirements.

DCMA Comments:

The purpose of conducting tests and evaluations is to verify that the product meets the performance requirements of the contract, which in this case included the fire resistance requirements. However, the design of the product needs to ensure that only components that are fire resistant are used in the manufacturing of mattresses. In this case, NAVSEA purchase description for the Innerspring Mattress was based on a commercial mattress that was modified to meet the Navy shipboard fire performance requirements. This mattress consisted of an innerspring component made up of coils individually pocketed in polyolefin material, which is not fire resistant. The innerspring component was used to satisfy the comfort requirements. Use of polyolefin material could have been a contributing factor for the mattresses not meeting the flammability requirements cited in the purchase description.

Appendix B, "Chronology of Events for Innerspring Mattresses Procured on Contract SPO100-00-D-EE72" does not include two key events even though they are mentioned in the body of the report:

(1) E-Mail message dated July 28, 2000 from Quality Assurance Specialist (QAS), Safety & Rescue Team, Defense Supply Center Philadelphia (DSCP) to DCMA Quality Assurance Representatives (QARs) <u>asking them not to send mattresses to Omega Point Laboratories, Inc.</u> Omega Point Laboratories, Inc. is a commercial test facility that DSCP contracted with to conduct the fire performance tests. The E-Mail message also informs the DCMA QARs to perform only dimensional, weight and visual examination on Size 2 crew mattresses. It should also be noted that the Procurement Contracting Officer (PCO) was a recipient of this E-Mail message.

(2) Contract modification dated June 29, 2001 directed the QAR to perform weight and dimensional requirements only. This modification also states that all other requirements in the contract in addition to NAVSEA PD1-00 REV D dated July 25, 2000 do not apply. When National Industries for the Blind (NIB) added Tupelo, Mississippi as the fourth location to manufacture and deliver mattresses, a post-award conference was held on June 5, 2001. Subsequent to the post award conference, there was a telecon between the QAR and the PCO. As a result, the PCO sent an E-Mail message on June 07, 2001 asking the QAR to inspect the mattresses produced by NIB at their Tupelo, MS facility for dimensional and weight conformance only. On June 08, 2002, the DCMA Team Chief for Mississippi area insisted that the PCO issue a contract modification and the modification was issued on June 29, 2001.

In some cases, verbal directions were provided to the QARs to perform only dimensional, weight and visual examination for all sizes. PCO advised the DCMA QARs that "this is a commercial item and the QAR is only responsible to verify length, width, thickness, weight and material certifications for ticking." The draft audit report highlights the fact that "DSCP also limited the quality assurance representatives' responsibilities to performing dimensional, weight, and visual examination only."

Added to Appendix B SUBJECT: Fire Performance Tests and Requirements for Shipboard Mattresses, D2002CH-0033

Recommendation 3: We recommend that the Director, Defense Contract Management Agency require National Industries for the Blind and its subcontractors to comply with quality assurance requirements for any future Innerspring Mattress contracts in accordance with Federal Acquisition Regulation part 42 or obtain modifications from the contracting officer for any changes to the 6-month conformance tests in contract requirements.

DCMA Comments:

Please note DCMA comments on the previous page also.

FAR 46.103(c) details that the PCO is responsible for issuing instructions to the CAO and FAR 43.102(a)(3) notes that only contracting officers may direct or encourage the contractor to perform work that should be the subject of a contract modification. We agree that directions from individuals other than a Contracting Officer are not a valid change to the contract.

The lessons learned from the administration of contract for the procurement of shipboard mattresses would be a topic of discussion at the next Executive Management Board (EMB) meeting scheduled for May 23, 2002. This meeting is attended by Senior Leaders across the Agency. DCMA has initiated action to ensure that DCMA members verify that customer directions fully comply with the basic principles of contracting, specifically the clauses that outline changes to technical and performance requirements. Also the District Commanders are being directed to ensure that the field activities fully comply with the requirements of FAR especially, the clauses that relate to issue of contract modifications and responsibilities of contracting officers.

Disposition:

- (x) Action is ongoing. ECD: June 30, 2002
- () Action is considered complete.

Team Members

The Contract Management Directorate, Office of the Assistant Inspector General for Auditing for the Department of Defense prepared this report. Personnel of the Office of the Inspector General of the Department of Defense who contributed to the report are listed below.

Garold E. Stephenson Henry F. Kleinknecht Ronald W. Hodges Lorin T. Pfeil Nicole M. Ellis Brett N. Ward LTC Patty J. Korn Ann L. Thompson